

NEW SPECIES AND NEW RECORD SPECIES OF  
THE GENUS *TETRAMORIUM* MAYR  
(HYMENOPTERA: FORMICIDAE)  
FROM SOUTHWESTERN CHINA

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XU Zhenghui and ZHENG Zhemin

Institute of Zoology, Shaanxi Normal University, Xi'an, Shaanxi 710062, China

**Abstract** Three species new to science and one new Chinese record species in the genus *Tetramorium* Mayr are discovered and described in Southwestern China, i. e. *T. cardiocarenum* sp. n., *T. yulongense* sp. n., *T. cyclolobium* sp. n., and *T. smithi* new record.

**Key words:** Formicidae, *Tetramorium*, new species, new record, China

Introduction

*Tetramorium* Mayr is a large genus in Formicidae which contains more than 387 species. Members of the genus are widely distributing in the tropical, subtropical and temperate regions of the world. In 1985, Bolton treated *Triglyphothrix* Forel as a synonym of *Tetramorium* Mayr. According to Wheeler's (1930-1931) list and Wu's (1941) catalogue, 4 species, 1 subspecies and 3 varieties were reported from China. Bolton (1976, 1977) recorded 9 species from China in his revisionary study of Tetramoriini. Recently Wang et al. (1988) had a systematic study of the genus from China, 15 species including 4 new species and 2 new record species were described. More recently, Zhou et Terayama (1991) listed 9 species from Taiwan, China. When we study the ant fauna of Southwestern China, 3 new species and 1 new record species are discovered. To the present time, 26 species, 1 subspecies, 3 varieties of the genus have been recorded from China. The type specimens are deposited in the Insect Collection, Institute of Zoology, Shaanxi Normal University, Xi'an, China.

Measurements and indices are as defined by Bolton (1977):

**Total Length (TL):** The total outstretched length of the individual, from the mandibular apex to the gastral apex.

**Head Length (HL):** The length of the head proper, measured in a straight line from the anterior clypeal margin to the midpoint of the occipital margin, in full face view. In

species with a strongly concave occipital margin the head length is measured to the mid-point of a line connecting the posterolateral projections.

Head Width (HW): The maximum width of the head behind the eyes, measured in full face view.

Cephalic Index (CI):  $HW \times 100 / HL$ .

Scape Length (SL): The straight-line length of the antennal scape excluding the basal constriction or neck.

Scape Index (SI):  $SL \times 100 / HW$ .

Pronotal Width (PW): The maximum width of the pronotum in dorsal view.

Alitrunk Length (AL): The diagonal length of the alitrunk in lateral view from the point at which the pronotum meets the cervical shield to the base of the metapleural lobes or teeth.

Maximum Diameter of Eye (MDE).

All measurements are expressed in millimetres.

1. *Tetramorium cardiocarenum*, sp. n. (Figs. 2, 9)

Holotype worker, TL 2.7, HL 0.71, HW 0.63, CI 88, SL 0.50, SI 80, PW 0.43, AL 0.75, MDE 0.14.

Head cardioform, occipital margin strongly concave, in full face view the head narrowing anteriorly. Mandibles striate. The anterior margin of clypeus roundly convex. Frontal carinae short, end in front of the level of the eyes. Pronotal corners rounded in dorsal view. Metanotal groove conspicuous, concave in profile view. Propodeal spines long and acute, straight. Metapleural lobes small, rounded. Petiole with ventral convex; the node rectangular, the anterior and posterior faces parallel, the dorsal surface straight; in dorsal view the node broader than long. Median portion of clypeus and dorsum of head with numerous parallel and fine longitudinal rugae. Spaces between the rugae with fine punctulations. Scrobearea densely reticulate-rugulose, lateral surfaces of head puncto-striatus. Alitrunk and pedicel segments finely and densely reticulate-rugulose. Dorsum of alitrunk with fine longitudinal rugae. Gaster smooth and shining. Dorsal surface of head and body with sparse, short and blunt suberect hairs. Dorsal surface of the antennal scapes with very short curved subdecubent hairs. Decubent hairs are present on the dorsal surfaces of the hind tibiae. Body in colour light yellowish brown; with the dorsal surfaces of head and alitrunk; and the gaster blackish yellowish brown.

Paratype workers, TL 2.4-2.7, HL 0.70-0.75, HW 0.61-0.68, CI 88-91, SL 0.49-0.55, SI 76-84, PW 0.40-0.46, AL 0.70-0.79, MDE 0.14-0.15 (10 measured). As holotype but in some specimens hairs are completely absent from dorsal surfaces of head and alitrunk.

Holotype: worker, Dali (25°45'N, 100°9'E), Yunnan Prov., 2000m, 11-X-1991,

No. A91-963 (Xu Zhenghui). Paratypes: 5 workers, with the same data as holotype; 5 workers, Anning Co., Yunnan Prov., 1820m, 19-VII-1991 (Xu Zhenghui); 5 workers, Mengla Co., Yunnan Prov., 650m, 13-VII-1991 (Xu Zhenghui); 5 workers, Duyun, Guizhou Prov., 780m, 10-X-1991 (Xu Zhenghui); 5 workers, Sanjiang Co., Guangxi Prov., 350m, 18-VIII-1992 (Xu Zhenghui).

The closest relative of *T. cardiocarenum* appears to be *T. fergusoni* Forel (Figs. 1, 8), but the former with the anterior margin of clypeus convex, metanotal groove concave, petiole with ventral convex, dorsal surfaces of head and thorax with sparse blunt short hairs.

## 2. *Tetramorium yulongense*, sp. n. (Figs. 4, 10)

Holotype worker, TL 2.9, HL 0.79, HW 0.71, CI 90, SL 0.60, SI 84, PW 0.50, AL 0.93, MDE 0.15.

Mandibles striate. Median portion of clypeus roundly and transversely convex, anterior margin slightly convex. Frontal carinae short, terminating at the level of the eyes. Scrobes absent. Occipital margin straight. In dorsal view the pronotal corners bluntly angled. Metanotal groove depressed on the lateral surfaces. Propodeal spines short, elevated, acute apically. Metapleural lobes rounded. Petiole in profile view with a small antero-ventral tooth-like process, the node with its anterior and posterior faces narrowing above, dorsal surface feebly convex, the posterodorsal angle rounded. In dorsal view the node broader than long. Median portion of clypeus with several fine longitudinal rugae, median longitudinal carina distinct. Dorsum of head with numerous fine longitudinal rugae, dense punctulations are present between the rugae. Dorsum of alitrunk coarsely reticulate-rugulose, spaces between the reticula with fine punctulations. The lateral surfaces of alitrunk and the pedicel segments densely punctulate, punctulations on pedicel segments are smaller. The median portions of dorsum of the nodes smooth. Gaster unsculptured, shining. Dorsal surfaces of head and body with abundant acute erect or suberect hairs. Numerous short subdecubent hairs are present on the dorsal surfaces of scapes and hind tibiae. Head and alitrunk blackish brown; tarsi yellowish brown; pedicel segments and gaster black.

Paratype workers, TL 2.7-3.0, HL 0.70-0.83, HW 0.63-0.71, CI 85-93, SL 0.50-0.60, SI 77-84, PW 0.44-0.50, AL 0.80-0.93, MDE 0.13-0.16 (8 measured). As holotype.

Holotype: worker, Lijiang Co. (26°55'N, 100°17'E), Yunnan Prov., 2400m, 8-X-1991, No. A91-930 (Xu Zhenghui). Paratypes: 11 workers, with the same data as holotype.

The closest relative of *T. yulongense* is *T. caespitum* (Linnaeus) (Fig. 3), but the former with dense punctulations between the longitudinal rugae on the dorsum of the head, lateral surfaces of pronotum without strong longitudinal rugae, metapleural lobes rounded api-

cally.

3. *Tetramorium cyclolobium*, sp. n. (Figs. 6, 12)

Holotype worker, TL 1.9, HL 0.56, HW 0.53, CI 93, SL 0.35, SI 67, PW 0.43, AL 0.58, MDE 0.14.

Mandibles weakly striate. Anterior margin of clypeus entire and straight, with a narrow flange. Frontal carinae long and strong, extending back well beyond the eyes, and then curved down, forming the upper and posterior margins of the scrobes. Scrobes deeply depressed, with a fine longitudinal carina. Occipital margin evenly convex. Alitrunk in dorsal view short and broad, the pronotal corners angled. Propodeal spines short and acute, straight. Metapleural lobes broad, rounded apically. Petiole in profile view with the node anteroposteriorly compressed, the anterior face of the node and the dorsum of the peduncle are connected by an arched surface, in dorsal view the node transverse. Median portion of clypeus with several fine longitudinal rugae and a strong longitudinal carina. Head, alitrunk and pedicel segments densely reticulate-rugulose. Dorsum of head with conspicuous median longitudinal carina. Gaster unsculptured, the first tergite with very fine basal striates. Dorsal surfaces of head and body uniformly clothed with a dense mat of pale trifold hairs, head also with a few elongate simple hairs which longer than the trifold ones. Lateral surfaces of alitrunk without hairs. Numerous short suberect hairs are present on the dorsal surfaces of scapes. Hind tibiae with dense trifold hairs on their dorsal surfaces. Body in colour yellowish brown, dorsum of head, and gaster blackish brown.

Paratype workers, TL 1.9-2.1, HL 0.55-0.59, HW 0.53-0.56, CI 93-98, SL 0.34-0.38, SI 63-67, PW 0.40-0.44, AL 0.55-0.60, MDE 0.13-0.14 (8 measured). As holotype, but in some specimens striates on mandibles are conspicuous.

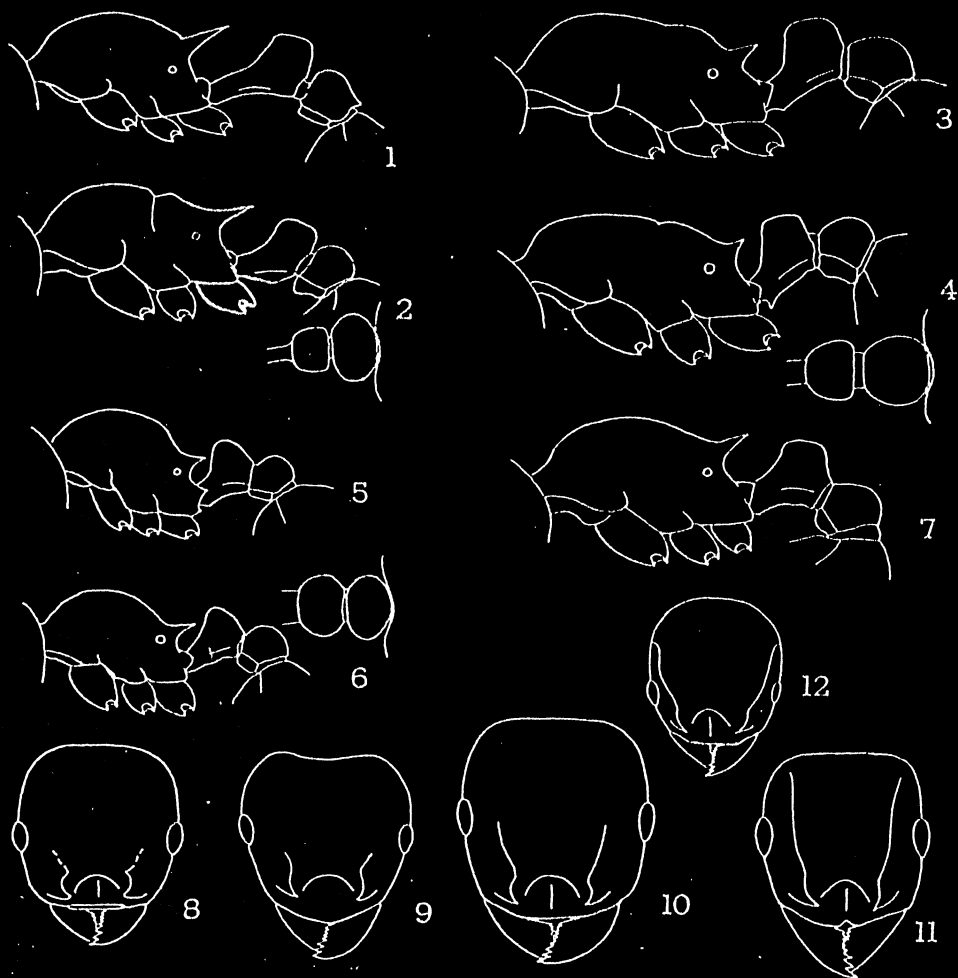
Holotype: worker, Guilin (25°17'N, 110°16'E), Guangxi Prov. 260m, 16-VIII-1992, No. A92-301 (Xu Zhenghui). Paratypes: 4 workers, with the same data as holotype; 4 workers, Nanning, Guangxi Prov., 210m, 3-IX-1991 (Xu Zhenghui).

The closest relative of *T. cyclolobium* is *T. walshi* (Forel) (Fig. 5), but in the former, the anterior face of the petiole node and the dorsum of the peduncle are connected by an arched surface instead of a deep concave, the metapleural lobes rounded apically.

4. *Tetramorium smithi* Mayr, new record (Figs. 7, 11)

Workers, TL 2.4-2.8, HL 0.63-0.70, HW 0.58-0.69, CI 92-98, SL 0.41-0.46, SI 67-74, PW 0.44-0.55, AL 0.68-0.80, MDE 0.14-0.18 (8 measured). A full description was given by Bolton (1977).

Distribution: Yunnan Prov. (Lincang Co., Mengla Co.), Guangxi Prov. (Nanning, Guigang).



Figs. 1-12 *Tetramorium* workers. 1-7, Alitrunks and pedicels. 1, *fergusoni*; 2, *cardiocarum*; 3, *caespitum*; 4, *yulongense*; 5, *walshi*; 6, *cyclolobium*; 7, *smithi*. 8-12, head in front view. 8, *fergusoni*; 9, *cardiocarum*; 10, *yulongense*; 11, *smithi*; 12, *cyclolobium*; sculpture and pilosity omitted. (1, 5, 8, after Bolton)

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## 中国西南地区铺道蚁属的新种和新记录

(膜翅目: 蚁科)

徐正会 郑哲民

(陕西师范大学动物研究所, 陕西省西安市 710062)

关键词 蚁科 铺道蚁属 新种 新记录 中国

本文报道了中国西南地区发现的铺道蚁属 *Tetramorium* Mayr 3新种和1新记录种: 心头铺道蚁 *T. cardiocarenum*; sp. n. 与 *T. fergusoni* Forel 接近, 但新种唇基前缘突出, 后胸沟凹陷, 腹柄节下方突起; 玉龙铺道蚁 *T. yulongense*, sp. n. 与 *T. caespitum* (Linnaeus) 接近, 但新种头背面纵皱纹间具密集刻点, 前胸背板侧面缺纵皱纹, 后侧叶端部钝; 圆叶铺道蚁 *T. cyclolobium*, sp. n. 与 *T. walshi* (Forel) 接近, 但该新种腹柄结前面与小柄背面以一弓形面相连, 不深凹, 后侧叶钝圆; 史氏铺道蚁 *T. smithi* Mayr, 为中国新记录。模式标本保存于陕西师范大学动物研究所昆虫标本室。